

## ABSTRACT

An apparatus and a method for controlling the path of oscillatory travel of a device within a two-axis system. A device, such as a camera, is held in a two axis gimbal system having motors for driving the azimuth and pitch axes. A two degree-of-freedom gyroscope is fixed to the case of the device. A first derivative circuit is interposed between a first input port for a loop for controlling device movement with respect to a first axis and a second input port for a loop for controlling device movement with respect to a second axis. Likewise, a second derivative circuit is interposed between the two input ports so that a periodic signal driving with respect to one axis generates a derivative function for driving with respect to the cross-axis. The cross axis signal is scaled to counteract the direct torquing of the gyro rotor that otherwise prevents smooth oscillatory slewing or scanning by the device.